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Examination request	exist

(54) Multimedia information process system

SUMMARY OF THE INVENTION

This patent relates to multimedia information process system which generates demodulated digital video, audio signal and other types of data which is transmitted and saved after encoding and multiplexing procedure. To provide improved performance of the multimedia information process system from media information selection procedure to process procedure which includes transmission process or recording process, the invented multimedia information process system includes: improving the wide use of data exchange service among a broadcasting system or communication system or storage system in the computer, simplifying the hardware architecture, being easy to add other functions, dealing a number of media and variation of media transmission speed flexibly. This multimedia information process system in this patent transmits or saves multimedia information, inputs lots of multimedia information, encodes the information by media unit, adds supporting information for media identification, packet synchronization and synchronization setting. Also it has an information source encoding device which generates element packet interchangeable with other systems, operates speed conformance and multiplexing of the packet coming from information encoding, and generates the multiplexing stream to be interchangeable with other systems. It changes the multiplexing stream according to transmitted media or saved media, and outputs transmission signal. By those methods, data exchange among broadcasting, communication, and storage in computer services can be easily performed, and hardware architecture is simplified. Also, it is easy to add other functions so variety applications can be developed.

REPRESENTATIVE DRAWING
Fig1

SPECIFICATION
[Name of the Invention]

Multimedia information process system

[Brief Description of Drawing]

Fig1 is a diagram of transmitter architecture which is in the multimedia information process system according to an exemplary embodiment of the present invention [01].

This content is the essential part so it does not contain the full text.

(57) Claims

[01]

This is a multimedia information system transmits or saves multimedia information. It inputs lots of multimedia information, then encodes the information by each media unit, identifies media, operates packet synchronization and adds additional information for synchronization setting. Also, it has an information source encoding device which generates element packet interchangeable with other systems, then operates speed conformance and multiplexing of the packet coming from the above information encoding, and generates the multiplexing stream to be interchangeable with other systems. It changes the multiplexing stream according to transmitted media or saved media, and outputs transmission signal.

[02]

The system according to claim 1, wherein the information source encoding device is a device that selects element media which edits media information in element media, decreases amount of the element media information, inputs output of the information source encoding device and generates element packet.

[03]

The system according to claim 1, wherein the packet multiplexing device is a device that adds additional information for media identification which corresponds with media information and operates synchronization of packet regeneration, speed conformance and multiplexing to generate multiplexing stream.

[04]

The system according to claim 1, wherein the transmission process device is a device that encodes transmission media or corrects error according to saved media, and processes transmitted framing for outputs of data from the error correction encoding method. Also, this device operates modulation procedure of output data from the transmitted frame generation device to transmit or record.

[05]

The system according to claim 1 further comprising software process device which has application program to defense of acting mode of information source process device or the packet multiplexing device.

[06]

The system according to claim 1, wherein the packet multiplexing device is a device that identifies media which corresponds with media information, adds additional information for packet synchronization and synchronization setting then generates fixed length packet, conforms the speed and operates multiplexing using fixed length packet as a unit.

[7]
The system according to claim 1, wherein transmission process device is a device that operates IP process and transmits multiplexing stream to internet protocol after the device operates TCP/UDP/XTP process about the multiplexing stream.

[8]
The system according to claim 1 further comprising a storage device which saves element packet generated by more than one information source encoding process device using element packet as its unit, an address management device which remembers the address of saved element packet by the element packet storage device, and an element packet transmission device which outputs element packet given direction from the address management device, from the element packet storage device to packet multiplexing device.

[9]
The system according to claim 1 further comprising a multiplexing stream storage device which saves multiplexing stream generated by the packet multiplexing device, a multiplexing stream management device which remembers address of the multiplexing stream saved wherein the multiplexing stream storage device, and a multiplexing stream transmission device which gives output of the multiplexing stream coming from the multiplexing stream management device to the transmission process device.

[10]
A multimedia information process system which transmits or saves multimedia information comprises a receiving process device that demodulates the transmitted packet multiplexing signal formed of suitable format for transmission media by characteristic of the transmission media to output the multiplexing stream, a packet separation device that separates needed element packet for generation of media information by each media unit from the multiplexing stream, and an information source demodulation process device that demodulates separated element packet by each media unit, identifies media, synchronizes the packet and regenerates media information for synchronization of regeneration according to added additional information.

[11]

The system according to claim 10, wherein the receiving process device further comprises a demodulation device which demodulates the packet multiplexing signal according to the characteristic of transmitted media, a transmitted frame regeneration device which sets up the transmitted frame synchronization from output signal of the above demodulation device to separate frame, and an error correcting demodulation device which sets up error correcting frame synchronization from the transmitted frame regeneration device to operate error correcting demodulation and outputs the multiplexing stream.

[12]

The system according to claim 11, if there is an error which cannot be corrected, the error correcting demodulation device outputs correction generation signal added to the multiplexing stream, which shows a part where the error exists, given to the packet separation device.

[13]

The system according to claim 11, if there is an error which cannot be corrected, the error correcting demodulation device outputs correction generation signal, which shows a part where the error exists, added to the multiplexing stream to the information demodulation process device.

[14]

The system according to claim 10 wherein the information demodulation device further comprises a packet separation device that separates additional information and encoding element media information, an information source demodulation device that demodulates the encoding element media information, and a demodulation data regeneration device that generates media information by synchronization of demodulation element media information which outputs the information source demodulation device.

[15]

The system according to claim 10 wherein the system is a system that includes a software process device again which has application program changing the acting mode of the information source demodulation process device or the packet separation device.

[16]

The system according to claim 10 wherein the packet separation device is a device that separates the multiplexing stream, which is multiplexed by use of one element packet as its unit,

by the unit of each element packet and it gives each element packet to the information source demodulation process device.

[17]
The system according to claim 10 wherein the packet separation device is a device that reconstructs the element packet using separation the multiplexing stream, which is multiplexed by fixed length packet including a separated element packet as its unit, and gives each element to the information source demodulation process device.

[18]
The system according to claim 10 wherein the receiving process device is a device that receives the packet multiplexing stream operating TCP/UDP/XTP process after operating IP process of transmitted data in internet protocol transmission path.

[19]
The system according to claim 10 wherein the packet separation device further comprises a received element packet storage device which saves separated element packet, a receiving program management device which remembers address of the saved element packet in the received element packet storage device, and receiving element packet lead device which gives the essential element packet from the receiving element packet storage device to the information source demodulation process device, for operating a directed program given direction from the received program management device.

[20]
A multimedia information process system which transmits or saves multimedia information comprises a receiving process part that inputs transmitted packet multiplexing signal in form of suitable format for transmitted media multiplexed by packet in more than one transmission media and generates multiplexing stream of each transmitted media, a packet separation device that separates packet multiplexing stream into element packet of each transmitted media, a packet re-multiplexing device that re-multiplexes element packet to a multiplexing stream, and a transmission process device that outputs the multiplexing stream to transmitted media by characteristic of the transmitted media which comes from the packet re-multiplexing device.

[21]
A multimedia information process system further comprises an information source modulation process device which generates modulated bit tray by operating modulation of each different

format of signal information source, a media multiplexing device that generates fixed length of packet tray by saving of identification information identifying format of signal and each modulated bit tray as a fixed length of packet unit, an architecture multiplexing device that sets up certain size of the fixed length of packet which is in the fixed length of packet tray with variety data as certain size of frame, and a transmission process device that generates transmission signal having suitable format of transmitted media for the frame tray outputted from the architecture multiplexing device.

[22]
The system according to claim 21 wherein the system is a system which multiplexes the architecture multiplexing device into control information and the fixed length of packet into direction information or clock information.

[23]
A multimedia information process system, which receives transmitted signal having a transmitted frame tray of the fixed length of packet with variety data and each certain size of frame, comprises a receiving process device that regenerates multiplexing bit tray, an architecture separation device that regenerates fixed length of packet tray and variety data from the multiplexing bit tray, a media separation device that outputs the fixed length of packet from the fixed length of packet tray and generates multiplexing bit tray suitable for identification information identifying signal format, and an information source demodulation process device that regenerates different format of signal differentiated according to application or media by the demodulation process of the modulated bit tray.

[24]
The system according to claim 23 wherein the architecture separation device is a device which separates multiplexed packet length of packet from the variety data and inside of the architecture such as control information, direction information or clock information.